

## CLAIMS

1 1. A bus interface control for selectively supplying pull-up voltage to signal lines of a  
2 bus, comprising:

3 a plurality of pull-up circuits, each connected to one of the signal lines and isolated  
4 from the other pull-up circuits to prevent signals from the one of the signal lines passing  
5 through the pull-up circuit to another one of the signal lines; and

6 a multi-mode power source that, in a first power mode, powers the plurality of pull-up  
7 circuits and, in a second power mode, does not power the plurality of pull-up circuits.

1 2. The bus interface control of Claim 1, wherein each pull-up circuit is isolated from the  
2 other pull-up circuits by a diode.

1 3. The bus interface control of Claim 1, wherein each pull-up circuit is isolated from the  
2 other pull-up circuits by a Schottky diode.

1 4. The bus interface control of Claim 1, wherein the power mode is responsive to an  
2 enable signal of the bus.

1 5. The bus interface control of Claim 1, wherein the multi-mode power source comprises  
2 a voltage regulator that can be selectively enabled by a voltage regulator enable signal.

1 6. The bus interface control of Claim 1, wherein the multi-mode power source comprises  
2 a switch circuit between a power source and the plurality of pull-up circuits.

1 7. The bus interface control of Claim 6, wherein the switch circuit comprises a field-  
2 effect transistor.

1 8. The bus interface control of Claim 1, further comprising a switchable bus bridge that  
2 is capable of operating in at least two bridging modes and, in a first bridging mode, connects  
3 at least some of the signal lines to a second bus and, in a second bridging mode, does not  
4 connect at least some of the signal lines to the second bus.

1 9. The bus interface control of Claim 8, wherein the bridging mode is responsive to an  
2 enable signal of the bus.

1 10. The bus interface control of Claim 9, wherein the power mode is responsive to the  
2 enable signal of the bus.

1 11. The bus interface control of Claim 8, wherein the plurality of pull-up circuits, the  
2 multi-mode power source and the switchable bus bridge are co-located on a removable circuit  
3 board.

1 12. The bus interface control of Claim 8, wherein the bus is a Compact PCI bus.

1 13. The bus interface control of Claim 1, wherein the plurality of pull-up circuits and the  
2 multi-mode power source are implemented in a single integrated circuit.

1 14. The bus interface control of Claim 13, wherein the single integrated circuit further  
2 comprises a switchable bus bridge that is capable of operating in at least two bridging modes  
3 and, in a first bridging mode, connects at least some of the signal lines to a second bus and, in  
4 a second bridging mode, does not connect at least some of the signal lines to the second bus.

1 15. A bus interface control for selectively connecting signal lines of a first bus to a second  
2 bus, comprising:

3 a plurality of pull-up circuits, each connected to one of the signal lines of the first bus  
4 and isolated from the other pull-up circuits by a diode to prevent signals from the one of the  
5 signal lines of the first bus passing through the pull-up circuit to another one of the signal  
6 lines of the first bus;

7 a voltage regulator that can be selectively enabled by a voltage regulator enable signal  
8 and that, in a first power mode, powers the plurality of pull-up circuits and, in a second power  
9 mode, does not power the plurality of pull-up circuits, wherein the power mode is responsive  
10 to an enable signal of the first bus; and

11 a switchable bus bridge that is capable of operating in at least two bridging modes  
12 and, in a first bridging mode, connects at least some of the signal lines of the first bus to the  
13 second bus and, in a second bridging mode, does not connect at least some of the signal lines  
14 of the first bus to the second bus, wherein the bridging mode is responsive to the enable  
15 signal of the first bus.

1 16. The bus interface control of Claim 15, wherein the bus is a Compact PCI bus.

2 17. The bus interface control of Claim 15, wherein the diode is a Schottky diode.

1 18. A bus interface control for selectively connecting signal lines of a first bus to a second  
2 bus, comprising:

3 a plurality of pull-up circuits, each connected to one of the signal lines of the first bus  
4 and isolated from the other pull-up circuits by a diode to prevent signals from the one of the  
5 signal lines of the first bus passing through the pull-up circuit to another one of the signal  
6 lines of the first bus;

7 a switch circuit between a power source and the plurality of pull-up circuits that, in a  
8 first power mode, powers the plurality of pull-up circuits and, in a second power mode, does  
9 not power the plurality of pull-up circuits, wherein the power mode is responsive to an enable  
10 signal of the first bus; and

11 a switchable bus bridge that is capable of operating in at least two bridging modes  
12 and, in a first bridging mode, connects at least some of the signal lines of the first bus to the  
13 second bus and, in a second bridging mode, does not connect at least some of the signal lines  
14 of the first bus to the second bus, wherein the bridging mode is responsive to the enable  
15 signal of the first bus.

1 19. The bus interface control of Claim 18, wherein the bus is a Compact PCI bus.

1 20. The bus interface control of Claim 18, wherein the diode is a Schottky diode.

1 21. The bus interface control of Claim 18, wherein the switch circuit comprises a field-  
2 effect transistor.

1 22. A bus interface control for controlling an interface to a bus having a plurality of signal  
2 lines, comprising:

3 isolation means for isolating each of the signal lines of the bus from other signal lines  
4 of the bus; and

5 pull-up means for selectively providing pull-up voltage to each of the signal lines of  
6 the bus.

1 23. The bus interface control of Claim 22, wherein the isolation means comprises a diode.

1 24. The bus interface control of Claim 22, wherein the isolation means comprises a  
2 Schottky diode.

1 25. The bus interface of Claim 22, wherein the pull-up means comprises a voltage  
2 regulator that can be selectively enabled by a voltage regulator enable signal.

1 26. The bus interface control of Claim 22, wherein the isolation means is controlled based  
2 on an enable signal of the bus.

1 27. The bus interface control of Claim 22, wherein the pull-up means comprises a switch  
2 circuit between a power source and the signal lines.

1 28. The bus interface control of Claim 27, wherein the switch circuit comprises a field-  
2 effect transition.

1 29. The bus interface control of Claim 22, further comprising bus bridge means for  
2 selectively bridging at least some of the plurality of signal lines of the bus to a second bus.

1 30. The bus interface control of Claim 29, wherein the bus bridge means is controlled  
2 based on an enable signal of the bus.

1 31. The bus interface control of Claim 29, wherein the bus is a Compact PCI bus.

1 32. A method of controlling an interface to a bus having a plurality of signal lines,  
2 comprising:

3 in one power mode, providing pull-up voltage to each of the signal lines and, in  
4 another power mode, not providing the pull-up voltage; and

5 isolating each of the plurality of signal lines from other signal lines to prevent signals  
6 from any of the signal lines passing to another signal line.

1 33. The method of Claim 32, wherein the isolating comprises blocking a signal with a  
2 diode.

1 34. The method of Claim 32, wherein the isolating comprises blocking a signal with a  
2 Schottky diode.

1 35. The method of Claim 32, further comprising determining the power mode based on an  
2 enable signal of the bus.

1 36. The method of Claim 32, wherein the providing pull-up voltage comprises enabling a  
2 multi-mode power source connected to the plurality of signal lines of the bus.

1 37. The method of Claim 36, wherein the multi-mode power source comprises a voltage  
2 regulator that can be selectively enabled by a voltage regulator enable signal.

1 38. The method of Claim 36, wherein the multi-mode power source comprises a switch  
2 circuit between a power source and the plurality of signal lines of the bus.

1 39. The method of Claim 38, wherein the switch circuit comprises a field-effect transistor.

1 40. The method of Claim 32, further comprising:  
2 in a first bridging mode, bridging at least some of the plurality of signal lines to a  
3 second bus and, in another bridging mode, not bridging the at least some of the signal lines to  
4 the second bus.

1 41. The method of Claim 40, further comprising determining the bridging mode based on  
2 an enable signal of the bus.

1 42. A bus interface control for selectively supplying pull-up voltage to signal lines of a  
2 bus, comprising:

3 a multi-mode power source capable of operating in at least two power modes;  
4 a plurality of pull-up circuits, each connected between one of the signal lines and the  
5 multi-mode power source; and

6 a plurality of diodes, each connected in series with one of the plurality of pull-up  
7 circuits and between one of the signal lines and the multi-mode power source and, thereby  
8 preventing current flowing in one direction through the one of the plurality of pull-up  
9 circuits;

10 wherein, in a first power mode, the multi-mode power source powers the plurality of  
11 pull-up circuits and, in a second power mode, the multi-mode power source does not power  
12 the plurality of pull-up circuits.

1 43. The bus interface control of Claim 42, wherein each diode comprises:  
2 a Schottky diode.

1 44. The bus interface control of Claim 42, wherein the multi-mode power source  
2 comprises:

3 a voltage regulator having a voltage regulator enable signal input connected to an  
4 enable signal of the bus.

5 45. The bus interface control of Claim 42, wherein the multi-mode power source  
6 comprises:

7 a power source and

8 a switch circuit between the power source and the plurality of pull-up circuits,  
9 wherein the switch circuit has a switch circuit enable signal input connected to an enable  
10 signal of the bus.

11 46. The bus interface control of Claim 42, further comprising:

12 a switchable bus bridge connected between the signal lines and a second bus, wherein  
13 the switchable bus bridge is capable of operating in at least two bridging modes and has a  
14 bridge enable signal input connected to an enable signal of the bus, whereby in a first  
15 bridging mode, the switchable bus bridge connects at least some of the signal lines to the  
16 second bus and, in a second bridging mode, the switchable bus bridge does not connect at  
17 least some of the signal lines to the second bus.